

Material Safety Data Sheet

1. Product and company identification

Produce Name: Polyguard # 95 Liquid Membrane Part B
Material uses: Product initiator
Supplier/Manufacturer: Polyguard Products
3801 South Interstate 45
Ennis, TX 75119
Tel (800) 541-4994
In case of emergency: CHEMTREC, US: +1-800-424-9300 International: +1-703-527-3887

2. Hazards identification

Physical state: Liquid
Odor: Slightly musty
OSHA/HCS status: This material is considered hazardous by the OSHA Hazardous Communication Standard. (29CFR 1910.1200)

Potential acute health effects
Inhalation: Hazardous in case of inhalation (lung irritant, lung sensitizer).
Ingestion: Slightly hazardous in case of ingestion.
Skin: Hazardous in case of skin contact (irritant, sensitizer). Skin inflammation is characterized by itching, scaling or reddening.
Eyes: Hazardous in case of eye contact (irritant)

Potential chronic health effects
Chronic effects: Repeated inhalation of vapor or aerosol above the occupational exposure limits could cause respiratory sensitization. A hyper- reactive response to even minimal concentrations of MDI may develop in sensitized persons. Repeated and/or prolonged contact may cause skin sensitization.

Carcinogenicity: Not listed as a carcinogen.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal respirable concentrations well in excess of the defined occupational limits.

Fertility effects: No adverse reproductive effects are anticipated.

Over-exposure signs/symptoms
Inhalation: This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol above the occupational exposure limits could cause respiratory sensitization. Symptoms include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of the chest and difficulty breathing. The onset of respiratory symptoms may be delayed for several hours after exposure. A hyper- reactive response to even minimal concentrations of MDI may develop in sensitized persons.
Ingestion: Ingestion may cause irritation of the gastrointestinal tract.
Skin: Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization.
Eyes: Adverse symptoms may include the following: pain and irritation, redness, watering.

2. Hazards identification

Medical conditions aggravated by over-exposure: May cause or aggravate dermatitis and asthma.

See toxicological information (section 11)

3. Composition/information on ingredients

United States			
Name	CAS number	%	
Polymeric Diphenylmethane Diisocyanate	101-68-8	100	

There are no additional ingredients present which within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact:	Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Get immediate medical attention.
Skin contact:	Remove contaminated clothing. After contact with skin, wash immediately with plenty of warm soapy water. If symptoms develop, obtain medical attention. Contaminated clothing should be cleaned thoroughly. An MDI study has demonstrated that polyglycol-based skin cleanser or corn oil may be more effective than soap and water.
Inhalation:	Remove patient from exposure, keep warm and at rest. Obtain immediate medical attention. Treatment is symptomatic for primary irritation and bronchospasm. If breathing is labored, oxygen should be given by administered by qualified personal. Apply artificial respiration if breathing has ceased or shows signs of failing.
Ingestion:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Provided that patient is conscious, wash mouth out with water. Seek medical attention immediately.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth to mouth resuscitation.
Notes to physician:	Symptomatic and supportive therapy as needed. Following severe exposure medical follow up should be monitored for at least 48 hrs.

5. Fire-fighting measures

Flammability of the product:	Not considered flammable.
Extinguishing media Suitable:	SMALL FIRE- Use dry chemical. SMALL FIRE- Use Water spray, Fog or Foam.
Not suitable:	Do not use water jet
Hazardous thermal decomposition products:	Decomposition products may include the following materials: Carbon Dioxide, Carbon Monoxide, Nitrous Oxide and HCN.
Special protective equipment:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-piece face mask operating in a positive pressure mode. Splash goggles, full suit boots and gloves.

5. Fire-fighting measures

Special Remarks on Fire Hazards Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

6. Accidental release measures

Personal precautions: No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personal from entering. Do not touch or walk through spilled material. Test area for MDI. Avoid breathing vapor or mist. Provide adequate ventilation. Wear respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental Precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Notify applicable governmental authorities if release is reportable. The CERCLA RQ for 4,4- MDI is 5,000 lbs.

Method for clean up
Small spill: Clean up should only be performed by trained personnel. People dealing with major spillages should wear full protective clothing including appropriate respiratory protection. Evacuate the area. Neutralize small spillages with decontaminate. Remove and dispose of residue. Prevent further leakage, spillage or entry into drains. Dispose of via a licensed waste disposal contractor.

Large spill: Contain and absorb large spillages onto an inert, non-flammable absorbent carrier (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminant.

Decontaminant Preparation of Decontaminate Solution: Prepare a decontaminate solution of 0.2-0.5 % liquid detergent and 3-8 % concentrated ammonium hydroxide in water (5-10 % sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets when preparing and using the solution. Use of Decontaminate Solution: Allow deactivated material to stand for at least 30 minutes before shoveling into drums. Do not tighten the bungs. Mixing with wet earth is also effective, but slower.

7. Handling and storage

Handling: Avoid personal contact with the product or reaction mixture. Put on appropriate personal protective equipment (see section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor, aerosols or mist. Do not ingest. Use only adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Keep containers properly sealed and when stored indoors, in a well ventilated area. Keep contents away from moisture. Due to reaction with water, producing CO₂ gas, a hazardous build up of pressure could result if contaminated containers are resealed. Do not reseal contaminated containers. Uncontaminated containers, free of moisture, may be resealed only after placing under a nitrogen blanket. Do not store in containers made of copper, copper alloys or galvanized surfaces. An ideal storage temperature is 16-38 C (660-100 F).

8. Exposure controls/personal protection

United States

Product name

Polymeric Diphenylmethane Diisocyanate

Exposure limits**NIOSH REL**

CEIL: 0.2 mg/m³ 10 minute(s)

TWA: 0.5 mg/m³ 10 hour(s)

OSHA PEL

CEIL: 0.2 mg/m³

ACGIH TLV

TWA: 0.5 mg/m³ 10 hour(s)

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedure:

Conditions of use, adequacy of engineering or other control measure, and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering measures:

Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as ACGIH current edition of "Industrial Ventilation, a manual of Recommended Practice.

Exposure controls:

Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with respiratory problems including asthmatic type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or skin allergies should be evaluated for their suitability of working with this product. Once a person is diagnosed as sensitized, no further exposure to the material that caused the sensitization should be permitted. The Occupational Exposure limits do not apply to previously sensitized individuals.

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection**Eyes**

Chemical safety goggles. If potential for splashing, use a full face shield.

Skin

Overalls button at the wrist & neck

Respiratory

When the product is sprayed or heated without adequate ventilation, an approved MSHA/NIOSH positive pressure, supplied air respirator may be required. Air purifying respirators equipped with organic vapor cartridges and a HEPA (P100) particulate filter maybe used under certain conditions when a cartridge change-out schedule has been developed in accordance with OSHA respiratory protection standard (29 CFR 1910.134)

Hands

Gloves- neoprene, nitrile rubber, butyl rubber. Thin latex disposable gloves should be avoided for repeated or long term use.

Protective equipment**Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

Physical state:	Liquid
Flash point	Closed cup: > 110 C (230 F) (Set-a-Flash)
Auto ignition temperature	> 600 C (1112 F)
Flammable limits	Not available
Color	Brown
Odor	Slightly musty
Boiling /Condensation Point	> 300 C (572 F) decomposes
Specific Gravity:	1.2 (water=1)
Vapor Pressure:	1 E -5 mmHg
Vapor Density	8.5 [Air=1]
Evaporation rate	Not available
NCO Content %	32.5 %

10. Stability and reactivity

Stability:	The product is stable at room temperature.
Hazardous polymerization:	Polymerization may occur at elevated temperatures in the presence of alkalis, tertiary amines and metal compounds.
Conditions to avoid:	Avoid high temperatures and freezing.
Materials to avoid:	Strong alkalis, acids and alcohols.
Hazardous decomposition:	Carbon Monoxide, carbon Dioxide, Nitrous Oxide and HCN.

11. Toxicological information

Acute Toxicity

Product/ingredient name	Species	Dose	Result	Exposure
Polymeric Diphenylmethane Diisocyanate	Rabbit	> 5000 mg/kg	LD50 Dermal	-
	Rat	> 5000 mg/kg	LD50 oral	-
	Rat	2240mg/m ³	LC 50 Respirable aerosol	1 hr
	Rat	0.49 mg/m ³	LC 50 Respirable aerosol	4 hr

Inhalation: This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol above the occupational exposure limits could cause respiratory sensitization. Symptoms include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of the chest and difficulty breathing. The onset of respiratory symptoms may be delayed for several hours after exposure. A hyper- reactive response to even minimal concentrations of MDI may develop in sensitized persons.

Ingestion: Ingestion may cause irritation of the gastrointestinal tract. Based on the acute oral LD50 this product is considered practically non-toxic by ingestion.

Skin: Moderate irritant. Repeated and/or prolonged contact may cause skin sensitization. There is limited evidence from animal studies that skin contact may play a role in respiratory sensitization. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

Eyes: The vapor, aerosol, and liquid are irritants.

11. Toxicological information

Carcinogenicity classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Polymeric Diphenylmethane Diisocyanate	-	3	-	-	-	-

12. Ecological information

Environmental effects: No known significant or critical hazards.

Aquatic ecotoxicity:

Product/ingredient name	Test	Species	Exposures	Results
Polymeric Diphenylmethane Diisocyanate	-	Zebra Fish	-	LC 50 > 1000 mg/L
	-	Daphnia magna	24 hours	EC50 > 1000 mg/L
	-	E Coli	-	EC 50 > 100 mg/L

13. Disposal considerations

Waste disposal :

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to section 7: HANDLING AND STORAGE and section 8: EXPOSURE CONTROL/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transportation information

DOT Classification * Single containers less than 5,000 lbs are not regulated. Single containers with 5,000 lbs or more of 4, 4, - Methyl diisocyanate are regulated. See information listed below.

AERG: 171

Regulatory Information	Un Number	Proper Shipping Name	Classes	PG	Label	Additional Information
DOT Classification	NA 3082	Other regulated substances liquid N.O.S. (Methyl Diphenyl Diisocyanate)	9	III	Misc. Hazardous materials	RQ

TDG Classification Not regulated
IMDG Class Not regulated
IATA-DGR Class Not regulated

15. Regulatory information

United States

HCS Classification: Toxic material
Irritating material
Sensitizing material

U.S. Federal regulations: **TSCA 4(a) final test rules: None**
United States Inventory (TSCA 8b): All components are listed or exempted.
TSCA 12(d) Unpublished health/safety studies
TSCA 12(e) Risk notification: 8EHQ-0892-9111
SARA 302/304 Emergency Planning and Notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products found
SARA 311/312 MSDS Distribution- Chemical inventory –hazard identification
No products listed.
Clean Water Act (CWA) 307: No products found
Clean Water Act (CWA) 311: No products found
Clean Air Act (CAA) 112 accidental release prevention No products were found.
Clean Air Act (CAA) 112 regulated flammable substances No products were found.
Clean Air Act (CAA) 112 regulated toxic No products were found.

SARA 313

Form R- Reporting Requirements

Product name	CAS number	Concentration
Diisocyanate compounds Category code N 120	9016-87-9	100 %

Supplier notification

Diisocyanate compounds Category code N 120	9016-87-9	100 %
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EPCRA section 313 (40 CFR 372) CERCLA (Comprehensive Environmental Response, Compensation and liability Act) 4, 4- Methyl diphenyl diisocyanate (CAS 101-68-8) has been a 5,000 lb RQ (reportable quantity). Any spill or release above the RQ must be reported to the National response Center. (800-424-8802).

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

California Prop. 65

No chemicals listed

Canada

WHMIS (Canada):

Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC)
Class D-2A: Material causing other toxic effects (VERY TOXIC)
Class D-2B: Material causing other toxic effects (toxic)

16. Other information

Causes damage to the following organs: Lungs, respiratory tract, skin, eyes. May be harmful is inhaled. May cause respiratory tract, eye and skin irritation. May cause allergic respiratory and skin reaction.

16. Other information

Hazardous Material

Hazardous Material Information System (USA)	Health -	*2	HAZARD RATING
	Fire Hazard-	1	4- Extreme
	Physical Hazard	1	3-Serious
	Personal Protection		2- Moderate
			1- Slight
			0- Minimal
			See section 8 for more detailed information on personal protection.

The customer is responsible for determining the PPE code for this material.

National Fire Protection

National Fire Protection Association (USA)	Health	2
	Flammability	1
	Instability	1
	Special	

References:

ANSI Z400.5, MSDS standard, 2004.-Manufacturer's Material Safety Data Sheet- 29CFR Part1910.1200 OSHA MSDS Requirements.-49 CFR Table List of Hazardous Materials, UN #, Proper Shipping Names, PG. – NIOSH Pocket Guide.

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Version:

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Notice to reader: **To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**